M 139152-US

FR 2,705A

ROQF 93.05.28 \*FR 2705677-A1 BC(4-C2B1, 10-E4D, 12-M10, 12-M11D) C(4-C2B1,

95-016148/03 B07 C07 ROQF 93.05.2 ROQUETTE FRERES SA \*FR 2705677-F 93.05.28 93FR-006430 (94.12.02) C081 3/12, A01N 25/12, A61K 9/16, 47/40, C05G 5/00 (C08L 5:16)

Microgranules produced by extrusion and spheronisation - contg. cyclodextrin, useful for controlled release of medicaments or agrochemicals

Addnl. Data: GIORDANO F, GAZZANIGA A, FOSSATI E, LEFEVRE P

Microgranules produced by extrusion and spheronisation contain  $\ge 1$ cyclodextrin (I) as an excipient.

Also claimed is the produ. of microgranules by introducing (I) into a mixer, opt. together with other excipients and/or active ingredients; adding H<sub>2</sub>O and/or EtOH; extruding the mixt.; introducing the extrudates into a spheroniser to form spherical microgranules; and drying the microgranules.

The microgranules are useful as carriers for pharmaceuticals, veterinary medicaments or agrochemicals.

ADVANTAGE

The microgranules dissolve more rapidly than those based on microcrystalline cellulose (MC) while still providing controlled release of active ingredients due to cyclodextrin clathrate formation.

PREFERRED GRANULES

The granules contain 1-98 (esp. 10-90) wt.% of (I), esp. β-cyclodextrin (Ia), opt. together with other excipients (esp. MC), lubricants, disintegrants and/or glidants. The granules may be coated with a solar contact granules may be coated with a solar coated granules may be coated granules and granules granules and granules gran with a soln. contg. sugars, polymers, waxes and/or lipid derivs., pref.

**EXAMPLE** 

A Patterson-Kelley high-speed granulator was charged with 30kg (Ia) and supplied with 10 litres H<sub>2</sub>O/EtOH (1:1) at a rate of 1 l/min. The mixt. was blended for 30 mins. and passed to a NICA E4 extruder with a die orifice size of 1 mm. The extrudates were processed in a NICA S2-450 spheroniser at 500 rpm for 9 mins. The granules were dried in a fluidised bed at 70°C for 30 mins. (18pp367DwgNo.0/0)

FR 2705677-A